

LISTING OF THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A rotary machine comprising:

a case having an exterior surface exposed to a supply of ambient air, a drive end, an opposite end, and an interior working chamber;

a rotary shaft supported for rotation within the working chamber between the drive end and the opposite end;

at least one machine component supported on the rotary shaft for rotation in the working chamber;

at least one air inlet and at least one air outlet formed in the case;

a first fan supported for rotation on the rotary shaft within the working chamber and arranged to create an internal air flow through the working chamber from one of the drive or opposite ends of the case to the other of the drive or opposite ends of the case and from the at least one air inlet over the at least one machine component to the at least one air outlet;

a cowl received over the case opposite end and defining a plenum between an interior surface of the cowl and the opposite end of the case, the cowl defining an annular exhaust opening around a perimeter of the cowl; and

a second fan positioned within the plenum and mounted for rotation on a portion of the rotary shaft, the second fan being arranged both for assisting the first fan in creating the internal air flow through the working chamber and for creating an external air flow through the exhaust opening and over the exterior surface.

2. (Original) A rotary machine according to claim 1, wherein the second fan is supported for rotation on a portion of the rotary shaft extending from the case.

3. (Previously Amended) A rotary machine according to claim 1, further comprising:

a gap between an inner surface of the case and the at least one machine component permitting the internal air flow to pass through the working chamber between the case and the machine component.

4. (Previously Amended) A rotary machine according to claim 1, further comprising:

a plurality of longitudinal openings provided in portions of the at least one machine component permitting the internal air flow to pass through the at least one machine component during operation.

5. (Previously Amended) A rotary machine according to claim 1, wherein the at least one machine component includes a rotor section and a stator section of an electric motor with the rotor section concentrically carried on the rotary shaft for rotation relative to the stator section.

6. (Previously Amended) A rotary machine according to claim 1, wherein the cowl further includes at least one air inlet port formed concentric with the rotary shaft for admitting a supply of the ambient air into the plenum, a portion of which is mixed with the external air flow and directed over the exterior surface of the case.

7. (Original) A rotary machine according to claim 1, wherein the at least one air inlet is provided through the drive end of the case.

8. (Original) A rotary machine according to claim 1, wherein the at least one air inlet is provided through the case near the drive end.

9. (Original) A rotary machine according to claim 1, wherein the at least one air outlet is provided through the opposite end of the case.

10. (Original) A rotary machine according to claim 1, wherein the at least one air outlet is provided through the case near the opposite end.

11. (Original) A rotary machine according to claim 1, further comprising at least one housing extension defining a cavity in communication with the interior working chamber of the case, the cavity having at least one air inlet port and at least one air outlet port defining a longitudinal air flow path through the cavity.

12. (Previously Amended) A rotary machine according to claim 1, wherein the first fan is arranged for creating the internal air flow from the drive end toward the opposite end of the case and wherein the second fan directs the internal air flow exiting the at least one air outlet toward the exhaust opening of the plenum to create at least a portion of the external air flow.

13. (Previously Amended) A rotary machine according to claim 1, wherein the first fan is arranged for creating the internal air flow from the opposite end toward the drive end of the case.

14. (Previously Amended) A rotary machine according to claim 1, further comprising:

a baffle plate positioned between the at least one air inlet and the first fan, the baffle plate having one or more air openings formed therethrough and being arranged to assist in distributing the internal air flow over the interior working chamber near the at least one air inlet.

15. (Previously Amended) A rotary machine according to claim 1, further comprising:

an inlet chamber in communication with the at least one air inlet, the inlet chamber positioned near the first fan; and

a plurality of air passages provided in a wall of the inlet chamber facing the first fan arranged to assist in distributing the internal air flow over the interior working chamber near the first fan.

16. (Previously Amended) A rotary machine according to claim 1, further comprising:

at least one supplemental air outlet positioned upstream of the at least one air outlet for permitting a portion of the internal air flow through the interior working chamber to exit the case prior to reaching the at least one air outlet.

17. (Original) A rotary machine according to claim 1, further comprising a plurality of air inlets.

18. (Original) A rotary machine according to claim 1, further comprising a plurality of air outlets.

19. (Original) A rotary machine according to claim 1, further comprising:

a baffle flange disposed around a circumference of an interior surface of the working chamber near the first fan.

20. (Currently Amended) A method of cooling a rotary machine having a case with an exterior surface exposed to a supply of ambient air, a rotary shaft supported within an interior working chamber of the case, and at least one machine component supported for rotation on the rotary shaft within the working chamber, the method comprising the steps of:

providing at least one air inlet and at least one air outlet in fluid communication with the working chamber;

mounting a first fan for rotation on the rotary shaft within the working chamber;

mounting a second fan for rotation on the rotary shaft within a plenum on one end of the machine and exterior to the case;

arranging the first fan to create an internal air flow through the working chamber from one end of the case to an opposite end of the case and from the at least one air inlet and over the at least one machine component to the at least one air outlet; and

arranging the second fan both to create an external air flow from the plenum back over the exterior surface of the case and to assist the first fan in creating the internal air flow through the working chamber.